
New Species of *Ericentrodea* from Bolivia and Colombia (Asteraceae, Coreopsidinae, Heliantheae)

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ABSTRACT. *Ericentrodea davidsmithii* from Bolivia and *E. ramirezii* from Colombia are described. A key is provided for the six known species of the Andean genus *Ericentrodea*.

The genus *Ericentrodea* Blake & Sherff (Blake, 1923) was established for a group of Coreopsidinae in Ecuador and Colombia that had strongly obcompressed achenes with contracted apices, 6–15 pappus bristles mostly in two groups over the angles of the achenes, and a marginal wing bearing a dense fringe of spreading setulae. A species with more highly dissected leaves later described from northern Peru, *E. decomposita* Blake & Sherff (Sherff, 1931), was the southernmost known record for the genus for over 60 years. Now, material collected in 1989 by the late David Smith in Bolivia is described, representing a considerable southeastward extension of the known generic range. The Bolivian species is similar to the Peruvian species in its highly dissected leaves. The species is named here after the collector. A second new species is also described from the northern part of the generic range in Colombia. The Colombian species is coauthored by Santiago Diaz-Piedrahita of the Universidad Nacional de Colombia, who brought the material for study, and is named for the collector B. R. Ramírez P. of the Herbario Universidad de Nariño.

Ericentrodea davidsmithii H. Robinson, sp. nov.

TYPE: Bolivia. Santa Cruz: Provincia Manuel Maria Caballero, 50 km al norte de Mataral (por la carretera Santa Cruz–Comarapa) pasando por San Juan del Potrero y bajando a la cuenca del alto Río Ichilo, 2,000–2,100 m, 26 May 1989, *Smith, Quintana & García 13419* (holotype, US; isotype, MO). Figure 1A, D, E.

Ad *E. decompositam* simila sed in caulibus glabris in capitulis subsolitariis et majoribus in bracteis involucri interiores ad 9 mm longis et 3.5 mm latis in acheniis superne in collo prologatis et breviter bilobatis et in setis pappi majoribus utrinque ca. 8 differt.

Flexuous vines with internodes ca. 8–9 cm long, stems essentially terete, multistriated with 6 stronger striae, glabrous, narrowly fistulose. Leaves opposite,

petioles 4.5–6.5 cm long, petioles and petiolules glabrous; blade (Fig. 1E) broadly triangular, mostly 10–15 cm long and wide, tri- to quadri-ternate, 30–40 ultimate pinnae deeply lobed to pinnatifid, generally ovate, 15–30 mm long, 12–17 mm wide, apices obtuse to shortly acute and minutely mucronate, surfaces glabrous with slightly prominulous veinlets. Inflorescence of ca. 3 heads on small lateral branches, holotype specimen with only 1 head fully developed at end of branch; peduncle ca. 3.5 cm long, glabrous. Head (Fig. 1A) homogamous, ca. 13 mm high, when mature with spreading bracts ca. 20 mm wide; outer involucral bracts herbaceous, linear, 7–8 mm long, ca. 1.5 mm wide; inner involucral bracts reddish yellow, oblong, 8–9 mm long, 2.5–3.5 mm wide, apex shortly acute, outer surface glabrous, with numerous longitudinal reddish lines; pales flat, similar to inner involucre in size, shape, texture, and lack of pubescence. Rays lacking. Florets 20–25, all bisexual; corolla yellow, ca. 8 mm long, tube ca. 2.5 mm long, glabrous, throat abruptly and narrowly campanulate, ca. 5 mm long, glabrous, lobes triangular, ca. 0.4 mm long and 0.3 mm wide, with scattered, narrow, monoseriate, multicellular hairs outside; anther thecae and appendages black, thecae ca. 3.5 mm long, appendages ovate, ca. 0.8 mm long, with median reddish duct reaching near tip; style branches flat, with narrow median groove and median reddish duct. Achenes (Fig. 1D) immature, strongly obcompressed, ca. 5.5 mm long, with narrow marginal wing, glabrous inside and outside, densely fringed by biseriate- and triseriate-celled setulae along margins, constricted above into a glabrous, broad neck ca. 1 mm long, apex shallowly but distinctly bilobed; pappus with 6–8 stout, retrorsely barbed bristles on each lobe, 1.5–2.0 mm long, with single smaller, smooth setulae at inner ends of each cluster. Pollen grains ca. 28 μ m diam.

Ericentrodea davidsmithii is known only from the type. The habitat given for the collection is “bosque primario, bosque pluvial montano; laderas con abundante *Prumnopitys* y pastizales antropogénicos.”

The new species appears closest in relationship to the geographically closest *Ericentrodea decom-*

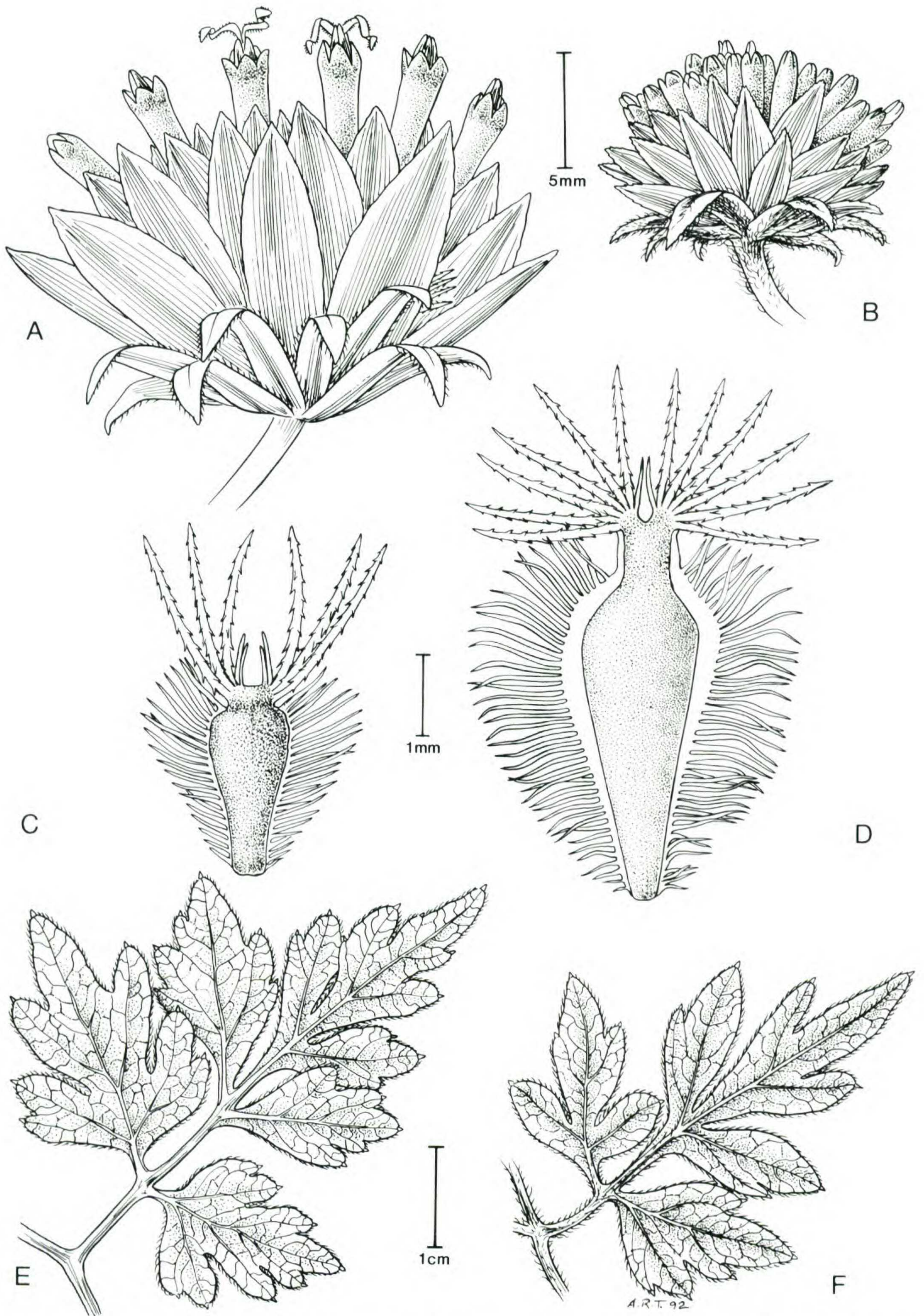


Figure 1. *Ericentrodea*. A, D, E. *E. davidsmithii* H. Robinson. B, C, F. *E. decomposita* Blake & Sherff. —A, B. Heads. —C, D. Achenes. —E, F. Portions of leaves.

posita of northern Peru. The latter is the only other member of the genus with as highly dissected, tri- to quadri-ternate leaf blades, having 20–40 leaflets. The four northern species in Ecuador and Colombia also have divided leaves, but the blades are only ternate or biternate. The most dissected leaves of *E. mirabilis* (Sherff) Blake & Sherff and the following new species, *E. ramirezii*, have 15–20 leaflets at most. *Ericentrodea davidsmithii* differs from *E. decomposita* by its glabrous stems, petioles, petiolules, and peduncles, more ovate leaflets, nearly solitary and much larger heads with broader and larger inner involucral bracts, achenes with a prominent neck, slight apical sinus, and its ca. 8 retrorsely barbed bristles in each of the two clusters. In contrast, *E. decomposita* has puberulous stems, petioles, and peduncles, rather elliptical leaflets, more numerous and smaller heads 7–8 mm high, achenes without a glabrous neck or bilobed tip, only 3 or 4 retrorsely barbed bristles in each of the clusters, and with ca. 2 smaller setulae on the inner ends of the clusters. Each species is known from a single collection, and achenes of both are somewhat immature, but the degree of immaturity seems nearly the same, and the differences in achene apices are regarded as reliable species differences. On the basis of the limited material, the stem of the new species also seems more terete. The stems of the holotype (F) and isotype (US) of *E. decomposita* examined are strongly hexagonal.

Illustrations are provided for a head, an achene, and a portion of a leaf for the new species and for the previously unillustrated *E. decomposita*.

Ericentrodea ramirezii H. Robinson & S. Diaz-Piedrahita, sp. nov. TYPE: Colombia. Nariño: Mpio. de Pasto, 2–3 km E de la población de Dolores, 2,900–3,000 m, 8 Feb. 1992, B. R. Ramírez P. & J. A. Cuayal M 4584 (holotype, COL; isotype, US).

In foliis biternatis in foliolis 15–20 apice rotundatis vel breviter obtusis in capitulis homogamis et in setis pappi erectis solum in fasciculis binis dispositis a congeneribus differt.

Vines with internodes 3.5–5.0 cm long, stems weakly hexagonal, sparsely puberulous, not fistulose. Leaves opposite, petioles 2.5–3.0 cm long, petioles and petiolules sparsely puberulous; blade broadly triangular, up to 8 cm long, 8–10 cm wide, biternate or with basal triternate lobules, ca. 20 broadly ovate leaflets mostly 15–25 mm long, 9–17 mm wide, apices rounded to shortly obtuse, margins crenate-serrate, upper surface minutely puberulous on veins, lower surface sparsely pilosulous, secondary veins

pinnate, ascending, slightly prominulous. Inflorescences on short lateral branches bearing reduced bi-tri-foliolate leaves, pyramidally thyrsoid; peduncles 7–15 mm long, glabrous. Heads homogamous, ca. 8 mm high, submature 7–8 mm wide; outer involucral bracts herbaceous, narrowly oblong, 2.5–4.0 mm long, ca. 0.8 mm wide; inner involucral bracts reddish yellow, oblong, ca. 6 mm long, 1.5–2.0 mm wide, apex shortly acute, outer surface glabrous, with numerous longitudinal reddish lines; pales flat, similar to inner involucre in size, shape, texture, and lack of pubescence. Rays lacking. Florets 20–25, all bisexual; corolla yellow, submature, ca. 5 mm long, mostly glabrous, basal tube ca. 1 mm long, throat narrowly campanulate, ca. 3 mm long, lobes triangular, 1 mm long, ca. 0.5 mm wide, pilosulous with a few monoseriate multicellular hairs outside; anther thecae and appendages black, thecae ca. 2 mm long, appendages ovate, ca. 0.5 mm long; style branches flat, with depressed median groove inside, shortly apiculate. Achenes strongly obcompressed, immature, ca. 1 mm long, glabrous inside and outside, densely fringed by setulae along margins, not obviously constricted above; pappus of two widely separated clusters of 4–5 retrorsely barbed bristles, 1.5–2.5 mm long, each group on short raised lip of apical callus. Pollen grains ca. 30 μ m diam.

Ericentrodea ramirezii is known only from the type. Detailed habitat data is lacking, but the cited elevation of 2,900–3,000 m is common for the genus in the northern Andes. The area around Pasto is associated with the eastern Cordillera in Nariño.

Ericentrodea ramirezii is closest to *E. homogama* and *E. mirabilis*, but it differs from both by the rounded or shortly obtuse tips on the leaflets. The species differs further from *E. mirabilis* by the lack of extra pappus bristles between the two primary clusters. The achenes are too immature to see whether a lateral wing will develop or whether the pappus will ultimately be raised on a prominent lobe and be directed laterally as in *E. homogama*. In spite of the lack of certainty about the achene, the new species can be distinguished from *E. homogama* vegetatively by having leaves with ca. 20 blunt-tipped leaflets rather than having less dissected leaves with about nine pointed leaflets in three sets of three.

The six known species of *Ericentrodea* can be distinguished by the following key:

KEY TO THE SPECIES OF *ERICENTRODEA*

- 1a. Leaf blades tri- to quadri-ternate, highly dissected into 20–40 leaflets; species of Peru and Bolivia.

- 2a. Stems hexagonal; stems, petioles, and peduncles puberulous; inflorescences with 5–10 heads; heads 7–8 mm high; inner involucre bracts and pales 5–6 mm long and to 2 mm wide; achenes constricted but without a short glabrous neck above, not apically bilobed; pappus with 3–4 retrorsely barbed bristles in each cluster; northern Peru *E. decomposita* Blake & Sherff
- 2b. Stems terete; stems, petioles, and peduncles glabrous; inflorescences with 1–3 heads, often only 1 developed; heads 12–14 mm high; inner involucre bracts and pales to 9 mm long and 3.5 mm wide; achenes with a distinct glabrous neck at upper end, slightly bilobed apically; pappus with 6–8 retrorsely barbed bristles in each cluster; central Bolivia
..... *E. davidsmithii* H. Robinson
- 1b. Leaf blades undivided to ternate or biternate, rarely with more than 12 leaflets; species of Colombia and Ecuador.
- 3a. Heads with rays; in fruit ca. 9 mm high and to 17 mm wide; upper leaves often simple; Colombia and Ecuador
..... *E. corazonensis* (Hieronymus) Blake & Sherff
- 3b. Heads without rays, homogamous; in fruit 6–8 mm high and 10 mm wide; upper leaves rarely simple.
- 4a. Achenes with pappus erect, often with 2–3 shorter bristles on each side between the main clusters; heads with ca. 12 florets; peduncles ca. 1 cm long; Ecuador
..... *E. mirabilis* (Sherff) Blake & Sherff
- 4b. Achenes with pappus separated at apex into two distinct, often laterally spreading clusters; heads with 20 or more florets; peduncles up to 3 or more cm long.
- 5a. Leaves biternate with usually nine leaflets; leaflets with apices acute; Ecuador
..... *E. homogama* (Hieronymus) Blake & Sherff
- 5b. Leaves biternate with 15–20 leaflets; leaflets with apices rounded or shortly obtuse; Colombia ...
..... *E. ramirezii* H. Robinson & Diaz-Piedrahita

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